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FARM ORGANIZATION

IN THE

NORTHERN OKANAGAN VALLEY

BRITISH COLUMBIA

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FARM ORGANIZATION IN THE NORTHERN OKANAGAN VALLEY, BRITISH COLUMBIA

by
1/ H.W. Trevor and D.W. Ware 2/

INTRODUCTION

The Okanagan district is a depression in the interior plateau of British Columbia stretching for about 120 miles from north to south and varying in width at different points, but having a general tendency to be wider at its northern part.

The Southern Okanagan is a single narrow depression with soil, climate and topography exceptionally well suited for growing tree-fruits under irrigation. This study does not deal with the southern fruit growing part of the Okanagan district, but is limited to the Northern Okanagan.

The Northern Okanagan is comprised of several parallel valleys which branch off into a number of smaller valleys forming numerous scattered pockets of arable land. These valleys constitute a mixed farming area, with the exception of a small region near Salmon Arm where apples are grown successfully without irrigation. The mixed farming area varies in its suitability for different crops.

Soils of the Northern Okanagan vary with altitude, latitude, and with differences in precipitation. A great variety of soils have developed in the Northern Okanagan: dark brown, black and a variation of grey-brown podzolic soils are well represented.

Precipitation varies considerably in different parts of the area, depending on the topography of the land and on the relative humidity of the air at different elevations. Generally, the heaviest precipitation takes place in the more northerly parts which have higher elevation and are nearest to the western slopes of the Selkirk range. The average annual precipitation at Vernon is 16 inches, at Armstrong 17 inches, at Salmon Arm 19 inches and at Tappen 21 inches.

The average temperature during the year at Vernon is 47 degrees Fahrenheit, at Armstrong 45, at Salmon Arm 48 and at Tappen 47. The length of the growing season at Vernon is 200 days, at Armstrong 194, and at Salmon Arm 199.

Variations in all of these factors and in both water and air drainage affect the growth of plants. Due to the proximity of mountains, air

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drainage is of considerable importance because it results in pockets of extreme moisture and temperature conditions close to growing plants. Cold air from the higher slopes drains at night into deeper parts of the valley and collects in local depressions. This causes late spring and early fall frosts with very damaging results to some crops. Among the hills of the Northern Okanagan only a slight shift in locality can greatly change the growing conditions for plant life.

The area covered in the study includes that part of the Okanagan Valley which lies north of Larkin, and also the adjacent regions of Tappen, Notch Hill, White Lake, Celista, Blind Bay and Sorrento, which are located in the vicinity of the highway leading from Salmon Arm to Kamloops. This includes the municipality of Spallumcheen and adjacent unorganized territories, all of which form a part of Census subdivision 3A. It also includes the municipality of Salmon Arm and the unorganized territories in its vicinity which are in Census subdivision 6B.

The survey was carried out in the summer of 1948 with the business records on the farms covering the year ending April 30, 1948.

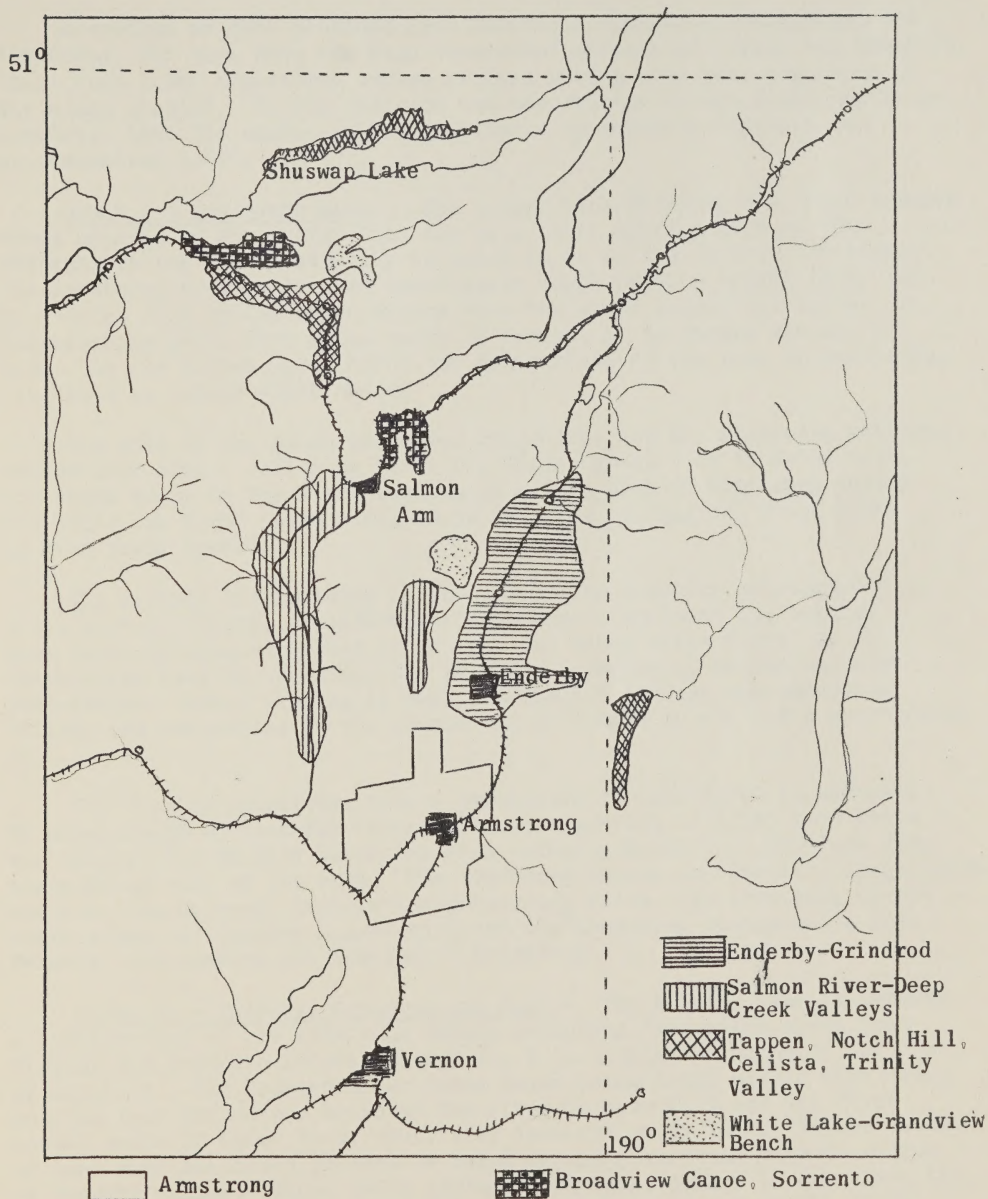
The objectives of the study were:


1. To describe agricultural settlements in the Northern Okanagan.
2. To consider the comparative advantages of different types of mixed farming in the Northern Okanagan.
3. To appraise the agricultural potentialities of the mixed farming area of the Northern Okanagan.

Records were obtained from about one quarter of all farm operators in the farming areas of the district. Only farms which had a total of ten or more acres were included in the study.

Because this farming community comprises a number of scattered settlements, which differ with respect to soil, climate, topography, altitude and degree of development, those which are most similar have been segregated and treated as a group. The Northern Okanagan was divided on this basis into the following six areas: Armstrong, Enderby-Grindrod, Salmon River-Deep Creek, Tappen-Notch Hill, White Lake-Grandview Bench, and Broadview-Canceo.

Map of Northern Okanagan Area
Showing Location of Study





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DIFFERENT SETTLEMENTS IN THE NORTHERN OKANAGAN

According to data obtained from Municipal offices at Salmon Arm and Armstrong, and also from the Land Assessors' offices at Vernon and Kamloops, there were 1,664 registered owners of land having more than ten acres in the areas studied. On the basis of the observation of the field men it is estimated that the number of farms actually operated in the area was approximately 1,200.

Group I - Armstrong Area.- The border line dividing the mixed farming areas covered by the survey from the tree fruit growing part of the Okanagan Valley was arbitrarily accepted to be in the vicinity of Larkin. The Armstrong area is located immediately north of this border line. It is a large flat valley which widens from the south toward the north. In the southern part, five miles north of Vernon, it is barely two miles wide. At its widest part, about two miles north of the town of Armstrong, its width is nearly eight miles.

The soil of the Armstrong area, generally, has the following pattern: bottom land soils, following Davis and Otter Creeks down to Otter Lake, are black muck; on the first benches on either side of Armstrong Valley the soils are light brown clay; above the clay benches are found light or even sandy loams.

The fertile bottom lands of the valley are used for growing truck crops such as celery, cauliflower and cabbage. Soils of the benches grow peas, grains and forage crops, and the sandy soils above the clay benches are used to advantage for potatoes, asparagus, melons and some tree-fruits. Mixed farming is well represented through the Armstrong Valley, and especially on the slopes and shoulders of the hills surrounding it.

The town of Armstrong, with a population of over 3,000 is situated 32 miles south of Sicamous Junction at an elevation of 1,187 feet above sea level. The Selkirk Mountains rise abruptly 3,000 to 5,000 feet some three miles east of the town. The Armstrong Cheese Co-operative Association, the B.C. Pea Growers' Association processing plant, the Armstrong Co-operative Egg and Poultry Association and the Armstrong Co-operative Seed Farmers' Association are located at Armstrong.

Group II - Enderby, Grindrod and Mara.- The Enderby area is largely a continuation of the Armstrong Valley extending four miles north from Stepney and from the Indian Reserve No. 2 to within two miles of the town of Grindrod. The Shuswap River forms three large loops within this area, and the land around the loops of the river is very flat and has river bottom soils of black muck, clay, clay loam and sandy loam. Higher benches of land with scattered pockets of mixed farming are found on both slopes of Enderby valley. These small agricultural areas cannot be seen from the main highway because they are concealed by timber growing on the steep sides of the hills bordering the lower part of the valley. Soil on the first benches is clay and clay loam, and on the upper benches is light

loam to sandy. Enderby is a mixed farming area, which includes 125 farms. Dairying is well represented and peas are often grown as a cash crop. The farms on the eastern side of the Shuswap River are larger than the ones on the western side.

The town of Enderby, with a population of 1,600, has an elevation of 1,180 feet. It has a large creamery and a sawmill which provide employment for a considerable part of its population.

The Grindrod area, comprising about 65 farms, is a continuation of the Enderby area, and generally follows the valley formed by the Shuswap River from about two miles south to two miles northeast of the town of Grindrod. Soil in this area is mostly clay with river silt mixtures, and black muck in the immediate vicinity of the river. It is all generally good for grain crops, peas, hay and vegetables. Drainage is a problem on some farms. This area is well suited to dairying and some of the best dairy farms north of Armstrong are located there.

The town of Grindrod has a population of about 400. The large local sawmill and the railroad provide the major share of employment.

The Mara district stretches farther north and northeast from the Grindrod area until the valley following the Shuswap River reaches Mara Lake. The Mara area is less than two miles wide and four miles long. There are about 40 farms in this area, most of which have about 40 cleared acres. The soil varies from heavy clay and clay loam to a light sandy loam, with a considerable quantity of black muck. Grain crops give heavy yields, but have a tendency to lodge. Wheat, oats, barley, alfalfa, timothy, peas and potatoes are all successfully grown in the Mara district. Dairy cattle and hogs are the main livestock enterprises.

On the two sides of the highway between Grindrod and Salmon Arm there are about 20 farms, some of which are located on steep slopes, and others on flat second benches or by the side of small lakes or creeks at the bottom of the valley. Soils on hillsides are gravelly and sandy, those in the immediate vicinity of small lakes and creeks are silty loam and black muck.

Group III - Salmon River Valley and Deep Creek Valley.- The Salmon River area is a narrow valley which is roughly four miles wide in the vicinity of Salmon Arm and narrows down to the width of a single farm at the other. Altogether the valley is roughly 18 miles long, extending from the town of Salmon Arm first in a southwestern direction and then straight south. There is considerable variation in the soil types which, generally, are made up of clay and river silt mixtures in the middle of the valley and tend to be lighter or even sandy on both sides toward the mountains.

Hay crops and vegetables are important in the area, which is predominantly mixed farming with a pronounced emphasis on dairying. In the southern part some seed potatoes are grown under irrigation.

The town of Salmon Arm, with a population of about 2,000, is situated on the shore of Shuswap Lake which has an elevation of 1,100 feet above sea level. It has a large creamery, a privately-owned fruit packing house, the Salmon Arm Farmers' Exchange which handles hay, vegetables, and fruits, and the Shuswap Co-operative Egg and Poultry Exchange.

Deep Creek Valley has a great variety of soils, with many pockets of poorly drained land. Consequently, drainage is a problem on many farms. Much of the land in this area, therefore, is not very good for grain. More than two-thirds of the cultivated land is used for hay crops and for rotation pasture. As this valley is subject to late frosts in the spring and to early frosts in the fall which make ripening of grain doubtful, dairying is the predominant industry in this area. Hay is plentiful, pasture is abundant and meadows are always green. There are 24 farms in the Deep Creek Valley, averaging about 60 acres of broken land.

Group IV - Tappen, Notch Hill, Balmoral, Trinity Valley and Celista.-

The Tappen area is quite hilly but the non-arable land there is fairly good for grazing. On the hillsides, soil varies from clay loam to sandy loam and gravel. In the lower parts, especially in the White Creek Valley from Tappen to Carlin Siding, soil is heavier and much of it is black muck. Tappen is an area of mixed farming with some grain and forage grown as cash crops. Alfalfa is probably the most dependable crop. Wheat is grown on the bench above the main Kamloops highway. The district is good for beef and dairying, although hillside pasture dries up badly during the summer. At one time, the Tappen district had approximately 100 acres of bearing apple orchard. All but a few acres of orchard have since been removed. There are approximately 55 farms in the district with an average cultivated acreage per farm of about 30 acres. One of the larger farms has 260 acres under cultivation, 190 acres of which are irrigated by means of a portable sprinkler system. This is a highly specialized seed and vegetable farm with carrots as the main crop, and it was not included in the study.

Notch Hill proper is a small railway centre and a settlement for the railway employees, many of whom live on small farms not far away from the station. There are about 90 farms in this district, all of which are mixed farms with dairying as the main enterprise. On the cold bottom soil of the area, peas and alfalfa are the common crops. On the average, the farms have about 40 cultivated acres and quite a few are part-time farms.

Balmoral Flats is also an area of mixed farming. The soil is mostly a heavy clay. It gives good yields of grain and alfalfa and fair yields of potatoes. There are approximately 15 farms in this area ranging from 20 to 35 cleared acres. Many of the farm operators supplement their farm earnings by working in the bush during the winter.

There is still quite a bit of timber land on the hillsides around the Trinity Valley, and much of the potentially arable land is not yet cleared. The main part of the valley is about two miles wide. The 20 farmers in the valley have mixed farms, growing mostly hay and keeping on the average nine dairy cows. Originally the settlers were largely dependent on logging for

their living. Now most of them can make a living from farming only. The soil in the Trinity Valley varies from gravelly to sandy loam, clay loam and clay. There is a drainage problem which is solved with different degrees of success by individual farmers.

Celista, Magna Bay and Anglemont, often referred to as the North Shore area, are not well developed settlements as yet. Of the 20 farms in Celista in 1948 only 12 had more than 20 acres of cleared land, and only two had more than 40 acres. Hay and some grains are grown and dairy cattle are kept on most of the farms. Irrigation would be beneficial and has been used with definite advantages on some farms. Unfortunately, only a few farms have easy access to a sufficient supply of water. Most of the original farmers were homesteaders. Some of them tried growing fruit trees but without much success. The soil is mostly clay, or a mixture of clay and silt with many stones in a number of places. Black muck is also in evidence in certain pockets. Magna Bay is a small settlement four miles east of Celista. There are just a few small farms there. In 1944 six Japanese families moved from the west coast and settled in Magna Bay. Two of these families bought land, and the other four rented. In 1948 each family had about 2.5 acres of strawberries and kept cows. As this was not enough to make a living they worked in logging camps during the winter. Delivery of strawberries is a problem because rough roads often cause considerable damage to the fruit. Anglemont, which is still farther east than Celista, is another very small settlement.

Group V.- Grandview Bench and White Lake.- By driving for approximately six miles from Salmon Arm towards Enderby and then by turning sharply to the left and to the east, one would find oneself on a very narrow winding and steep road leading into higher benches of land which is still mostly overgrown with timber. After reaching the bench with an altitude of approximately 1,500 feet higher than that of Salmon Arm, the road branches out in several directions, each leading to a number of scattered farms. This district is known as Grandview Bench.

The soil is predominantly sandy to sandy loam and in a number of places is quite rocky but not gravelly. Some soil on the lower parts of the hillside facing Grindrod is somewhat heavier than in the rest of the area. This is referred to as chocolate loam. The predominating crop is alfalfa. Some barley and oats are grown for forage feed. Even virgin land on the Grandview Bench does not produce good crops unless well manured or fertilized. This bench probably can be developed as a dairying district. At the present time most farms have from 15 to 30 cleared acres and keep approximately six cows which, for at least part of the season, are pastured in heavy bush. There are about 24 settlers in Grandview Bench. Less than half of them are full-time mixed farmers; the others are part-time mixed farmers who during the winter months work in the woods.

In the Grandview Bench area one gets the impression that a number of farms are overstocked and are short of feed. In order to maintain the existing number of animals and especially in order to increase their live-stock, many farms would have to increase the acreage in hay or improve existing hay land. Coyotes are a problem on Grandview Bench.

White Lake derives its name from a nearby lake of the same name which contains large alkali deposits that give it a whitish appearance. The soil in the area is very alkaline and predominant sandy loam to gravel on the higher slopes, and clay loam to clay with spots of black muck in the lower areas. The land is rocky in many places.

The main income of the settlers is from lumber. Most of the wood which is sold off the farms is in the form of ties, posts and logs. There are a number of small portable sawmills in the district. The majority of the farms are part-time, the average farmer keeping five cows and selling cream. There are about 22 farms in the White Lake area. The largest of them has 40 acres broken; most of the farms have about 15 improved acres.

The White Lake-Grandview Bench area is still in the stage of development. Most of the roads leading to farms are narrow, winding, dirt roads, some of them little more than trails.

Group VI - Broadview, Canoe, Sorrento and Blind Bay.- Practically the whole of the area east of the town of Salmon Arm within the boundaries of the municipality (except for some parts of Canoe Valley) is a fruit growing area. In 1948 there were 1,585 acres in tree fruits in the Salmon Arm area, including Broadview, Merton Hill, South Canoe, Larch Hill, North Canoe, Lakeshore, Tank Hill and Mount Ida. In these districts there were approximately 200 commercial orchards. According to the packing house there were 260 fruit shippers. About half of the orchards had five or more acres in apples, the majority having from ten to 15 acres. Approximately 15 growers had orchards that were over 15 acres; only three had 50 or more acres under orchard. The topography of the district is rolling and some of the hillsides are quite steep. Most of the orchards are located on the slopes facing west, northwest and north. The average annual precipitation is 20 inches. As a high relative humidity fosters growth of fungi, scab is a problem.

The Sorrento and Blind Bay district is another tree fruit growing area in the North Okanagan. There are about 120 acres of tree fruit in the area; small fruits are also of considerable importance. This district is well known as a good fishing resort as well. There are about 35 farms in this area, the majority of which are situated along the shore of Shuswap Lake from Blind Bay in the east to the railway station at Elson in the west. About two-thirds of all farms are within three miles on each side of Sorrento proper. The average size of farms is about 15 cultivated acres. Out of the 35 farms, 23 were registered fruit farms, while most of the others were mixed farms stressing dairying. A couple of farms keep good beef cattle.

Pasture is a problem in Sorrento. There is no range land and all unimproved land is heavy bush, unsuitable for grazing. The operators clear land for pasture, keep cattle on wild stumpy land during the day and on good tame pasture in the vicinity of the barn during the night. Dry stock are not fed inside until December. Soils vary from sandy to gravelly loam with some clay loam and spots of black muck. The climate in this area is not unlike that of Salmon Arm; if anything, it is slightly more moderate.

Snowfall in winter is heavier, but there is less rain in summer than in the Salmon Arm district. Originally the Sorrento district had its own co-operative packing house, but this was destroyed by fire. Now they have no packing facilities and all fruit is shipped to Salmon Arm for packing.

THE FARM BUSINESS IN THE NORTHERN OKANAGAN

Farm business records were obtained from a total of 231 farms distributed over the above areas. In the Armstrong area (Group I) where it is estimated that there are about 353 farms operated on a full-time basis, 80 records were obtained. In the Enderby-Grindrod area (Group II) 56 records were obtained out of a total of 250 farms. In the Salmon River-Deep Creek area (Group III) which has 105 farms, 35 records were obtained. The Tappen-Notch Hill area (Group IV) which lies outside the Northern Okanagan proper and has 210 farms, was represented by 23 records. Fifteen records were obtained in the White Lake-Grandview area (Group V) representing a total of 46 farms, while in the Broadview-Canoe area (Group VI) which has 235 farms, 22 records were supplied.

Size of Farms.— The size of the farms visited, in improved acres, varied from eight to 500 acres in Armstrong, from eight to 139 acres in Enderby-Grindrod, from 11 to 130 acres in Salmon River-Deep Creek, from six to 173 acres in Tappen-Notch Hill, from five to 43 acres in White Lake-Grandview Bench, and from ten to 83 acres in the Broadview-Canoe area.

Farms with less than 20 cultivated acres comprised 47 per cent of all farms in the White Lake-Grandview Bench area, 41 per cent in the Broadview-Canoe area, and less than 18 per cent in the remaining four areas. Farms with more than 80 acres under cultivation, included 18 per cent of all farms in the Armstrong area, 14 per cent in Enderby-Grindrod, 11 per cent in Salmon River-Deep Creek Valley, nine per cent in Tappen-Notch Hill and five per cent in the Broadview-Canoe area. None of the farms in the White-Lake-Grandview area had 80 acres under cultivation.

Land Utilization.— Only 57 per cent of all potentially-usable land of the farms in the study was under cultivation. This proportion varied in different areas, and was the highest in the Armstrong district (75 per cent), and lowest in the White Lake-Grandview Bench area (24 per cent).

The proportion of improved acreage to total acreage varied as follows: in Armstrong improved acreage was 54 per cent of total acreage, in Enderby-Grindrod 39 per cent, in Salmon-River-Deep Creek 41 per cent, in Tappen-Notch Hill 27 per cent, in White Lake-Grandview Bench 15 per cent and in Broadview-Canoe 39 per cent.

The proportion of acreage in grain crops and field peas to total improved acreage in decreasing order was 36 per cent in Enderby-Grindrod, 35 per cent in Armstrong, 24 per cent in Salmon River-Deep Creek, 18 per cent in White Lake-Grandview Bench and in Tappen-Notch Hill, and seven per cent in Broadview-Canoe.

Table 1.- Average Land Utilization per Farm in the Different Areas of the North Okanagan
1947 - 1948

[illegible]

The proportion of the improved acreage in forage crops from high to low were as follows: 64 per cent in White Lake-Grandview Bench, 53 per cent in Tappen-Notch Hill, 50 per cent in Salmon River-Deep Creek, 42 per cent in Enderby-Grindrod, 42 per cent in Armstrong, and 35 per cent in the Broadview-Canoe area.

The percentage of the improved acreage in vegetables and roots was highest in Salmon River Valley (six per cent), closely followed by the Armstrong area (five per cent).

The largest proportion of newly-cleared acreage was found in the Tappen-Notch Hill and White Lake-Grandview Bench areas. Both these areas had more than 60 per cent of all their land in timber and in bush pasture. Table 1 records a detailed pattern of land use on farms in the different areas of the Northern Okanagan.

Crop Yields.— The complex soils of the Northern Okanagan generally are rich in mineral content, but some of them are lacking in organic matter and conservation measures are important. Bottom lands are excellent for growing truck-crops and peas. Organic muck soils in damp locations are especially well suited to specialized vegetable crops. Clay soils in the lower part of the valleys give very high yields of winter wheat, oats, barley, field peas, ensilage corn, roots, and potatoes. Most soils on the first benches are very good for growing grain crops if the content of organic matter is kept up by introducing a legume rotation, or by application of manure. Alfalfa is grown successfully on higher and better drained ground. Soils on hillsides and on higher benches are not as fertile as soils on the lower benches but, under proper management, can produce a fair crop of hay and feed grains.

The crop yield index 1/ was 117 for the Enderby-Grindrod area, 107 for Salmon River-Deep Creek, 97 for Broadview-Canoe, 92 for Armstrong, 84 for Tappen-Notch Hill, and 79 for White Lake-Grandview Bench. It should be kept in mind, however, that every one of the six areas had a variety of soils and consequently a considerable variation in yields in different localities. For example, the range in yields of oats was from 20 to 90 bushels in Armstrong, from 30 to 100 bushels in both Enderby-Grindrod and Salmon River-Deep Creek, and from 25 to 80 bushels in Tappen-Notch Hill. The range in yields of winter wheat was from ten to 55 bushels in Armstrong, from 20 to 60 bushels in Enderby-Grindrod, from 20 to 50 bushels in Salmon River-Deep Creek, and from ten to 30 bushels in Tappen-Notch Hill. Very little grain was threshed in the White Lake-Grandview Bench and Broadview-Canoe areas.

On the average, the Armstrong area had better yields of ensilage corn, peas and mangels than the other areas. Enderby-Grindrod and Salmon River-Deep Creek had better yields of hay crops and oats. The average yields of alfalfa hay were: 2.0 tons in Armstrong, 3.0 tons in Enderby-Grindrod, 2.7 tons in Salmon River-Deep Creek, 2.0 tons in Tappen-Notch Hill and

1/ The average for the 231 farms visited is taken as 100. Above average yields are above 100 and below average yields are less than 100.

1.8 tons in the White Lake-Grandview area.

Of all areas, Broadview-Canoe had the highest yields of apples even though the average yield of 253 packed boxes 1/ per acre for 1947 is considerably lower than usual for this fruit district. Poor yields of apples in several orchards during the 1947 crop year account for this. Yields of apples are never as high in the Salmon Arm district as in the area near Vernon and south of Vernon.

Land Values.- The average value per acre of improved land without buildings, as calculated from the records, was \$113 in Armstrong, \$120 in Enderby-Grindrod, \$105 in Salmon River-Deep Creek, \$73 in Tappen-Notch Hill, \$64 in White Lake-Grandview, \$368 in Broadview, and \$172 in the Canoe-Sorrento area. Average values per acre of unimproved land for the corresponding areas were \$17, \$22, \$10, \$7, \$6, \$39 and \$18.

Values per acre of apple orchard varied from about \$350 to \$750 depending on the age of the trees, their variety and the conditions of the orchard. Some of the black muck land utilized for growing vegetable crops was valued at \$500 or more per acre. These highly specialized farms were not included in the study.

Investment in the Farm Business.- The three major mixed farming settlements - Armstrong, Enderby-Grindrod and Salmon River-Deep Creek - and also the fruit area of Broadview-Canoe, did not vary greatly in the average total farm investment. In these four areas, less than ten per cent of farmers had a total investment under \$5,000, and less than 41 per cent had a total investment under \$10,000. The corresponding percentages for the Tappen-Notch Hill area were 26 per cent and 65 per cent, and for White Lake-Grandview Bench area they were 27 per cent and 100 per cent.

Average investments per farm in land, buildings, livestock, equipment and supplies on hand are provided in Table 2 for each of the areas. The greatest portion of the assets in all areas was invested in land, the second largest portion was invested in buildings, and the third largest portion was invested in equipment in all areas except Tappen-Notch Hill and White Lake-Grandview Bench where investments in livestock were larger than those in equipment.

Values given to the assets were on the whole quite conservative. Except in the case of livestock, and of newly-purchased equipment, the long time average prices rather than current prices were used as the guide in establishing valuations. (Table 2).

1/ One box contains 40 lb. of apples.

Table 2.- Average Investment per Farm in Land, Buildings, Equipment, Livestock and Supplies in Different Areas of the Northern Okanagan, 1947-1948

Investment category	Area															
	Enderby-				Salmon				Tappen				White Lake			
	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$		
Armstrong	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$	Per cent of total	\$		
(80 farms)	(56 farms)	(25 farms)	(35 farms)	(25 farms)	(15 farms)	(22 farms)	(231 farms)									
Land	47	7,330	6,399	47	5,750	43	3,874	42	2,086	33	7,504	51	6,203	46		
Buildings	27	4,117	3,430	25	3,376	25	2,516	28	1,919	30	4,074	28	3,532	26		
Equipment	15	2,372	2,295	17	2,153	16	1,104	12	1,120	17	2,111	14	2,088	16		
Livestock	10	1,632	1,327	10	1,939	15	1,505	17	1,137	18	949	6	1,495	11		
Supplies	1	129	145	1	168	1	133	1	100	2	131	1	137	1		
Total	100	15,580	13,596	100	13,426	100	9,132	100	6,362	100	14,769	100	13,455	100		

The average value of machinery was \$2,088 for the 231 farms and ranged from a high of \$2,372 for the Armstrong area to \$1,104 for the Tappen-Notch Hill area. More than one-half of all farms surveyed in the Armstrong, Enderby-Grindrod and Broadview-Canoe areas had tractors, 43 per cent of the farms had tractors in the Salmon River-Deep Creek area, 30 per cent in the Tappen-Notch Hill area and only 13 per cent in the White Lake-Grandview Bench area. Most of the farms in all of the areas had a car or a truck. There were a few farms in the Armstrong, Enderby-Grindrod and in Salmon River-Deep Creek areas which had more than one tractor; there was no farm with more than one tractor in the remaining three areas.

Sources of Receipts.- Sale of livestock and livestock products comprised more than one half of all cash receipts on farms in all areas except in the fruit growing area of Broadview-Canoe where it was 19 per cent of the total. The major single source of income except in the Broadview-Canoe area was dairying. This comprised about one-third of all cash receipts, the share varying by area from 31 to 41 per cent of the total. In the Broadview-Canoe area the receipts from dairying were 11 per cent of the total. This district derived 56 per cent of total cash receipts from the sale of fruit.

In order of relative importance, the proportion of receipts from grains and peas to the total was 13 per cent in Enderby-Grindrod, 11 per cent in Armstrong, five per cent in Tappen-Notch Hill, four per cent in Salmon River-Deep Creek, one per cent in White Lake-Grandview Bench, and one per cent in the Broadview-Canoe area.

The proportion of receipts from sale of hay in decreasing order was 15 per cent of all receipts in Enderby-Grindrod, 14 per cent in Salmon River-Deep Creek, ten per cent in Armstrong and six per cent in Tappen-Notch Hill. Very little hay was grown for sale in the White Lake-Grandview Bench and Broadview-Canoe areas.

Logging was most important in White Lake-Grandview Bench (20 per cent of total) and in Tappen-Notch Hill (17 per cent of total). In the remaining areas sales of products from farmers' woodlots and from wages earned in logging camps comprised less than five per cent of the total.

Labour Earnings.- The highest average labour earnings were obtained in the Salmon River-Deep Creek area and the lowest in the White Lake-Grandview Bench area.

Farms with larger cultivated acreages had larger average labour earnings in the Armstrong, Enderby-Grindrod, in Salmon River-Deep Creek and Broadview-Canoe areas. This can be observed from Table 3. These areas have land which is better suited to efficient production of grain, forage or fruit crops than Tappen-Notch Hill and White Lake-Grandview Bench, and they derive a considerable share of their income from these sources. In the Tappen-Notch Hill and White Lake-Grandview Bench areas farms with larger cultivated acreage did not have larger labour earnings. In these areas income from livestock enterprises, from sale of woodlot products and wages earned away from farms played a greater part than income derived from grain and forage crops grown for sale. Cattle in these areas can roam away from

the farm and often are pastured in this fashion.

Table 3.- Average Labour Earnings per Farm in Different Areas of the Northern Okanagan According to Size, 1947-1948

	Size in cultivated acres				
	: Less than 200	: 200-399	: 400-799	: 800 & more	: All
	(44 farms)	(82 farms)	(76 farms)	(29 farms)	(231 farms)
	- labour earnings in dollars -				
Armstrong	677	697	1,073	1,900	1,045
Enderby-Grindrod	409	703	912	2,140	942
Salmon River-Deep Creek	318	742	1,487	2,203	1,213
Tappen-Notch Hill	610	736	657	-136	614
White Lake-Grandview Bench	674	508	159	-	561
Broadview-Canoe	1,166	857	1,175	1,242	1,045
For all farms	703	711	1,073	1,845	972

The distribution of earnings on farms in the different areas is provided in Table 4. The largest proportion of farms with minus labour earnings was in the Tappen-Notch Hill and the White Lake-Grandview Bench areas. Less than five per cent of all farms there had labour earnings of over \$2,000. Of the 231 farms in all areas only four per cent had labour earnings over \$3,000.

In table 5 details are provided on the average receipts, expenses and earnings for each of the areas included in the study. Labour earnings, which represent the total returns to the farm operator for his year's work and management after all cash and non-cash expenses have been deducted, is the best measure for comparing the degree of success of the operation of different farms. It is not a good measure of income available to the family from farming for their living expenses and for savings. The non-cash expenses, such as the value of family labour and the interest on farmer's equity in the business, are included as expenses. They may be added to labour earnings, therefore, in order to show the total cash and non-cash returns to the farm family. The total amount calculated in this way will still allow for the depreciation of buildings and equipment. The total cash and non-cash income available to the family when the charge for unpaid labour and for interest on equity are added to labour earnings for the various areas is shown in Table 6. The total cash and non-cash family income from farming in every area was approximately twice as large as the calculated labour earnings.

Table 5.- Average Farm Business Summary in Different Areas of the Northern Okanagan, 1947 - 1948

[illegible]

Table 6.- The Total Average Cash and Non-Cash Family Income from Farming after Allowing Depreciation on Buildings and Equipment in Various Areas of the Northern Okanagan, 1947-1948

Area	:	:	Value	:	Savings	:	Total
	:	:	of	:	in	:	cash and
	:	Labour	:	unpaid	:	interest	non-cash
	:	earnings	:	labour	:	charges	income
- dollars -							
Armstrong	1,045	518	709	2,272			
Enderby-Grindrod	942	553	615	2,110			
Salmon River-Deep Creek	1,213	662	609	2,484			
Tappen-Notch Hill	614	524	429	1,567			
White Lake-Grandview							
Bench	561	779	266	1,606			
Broadview-Canoe	1,045	239	652	1,936			

Net Worth.- 1/ The average net worth of farm operators as of May 1, 1948 was \$18,545 in Armstrong; \$16,181 in the Enderby-Grindrod area, \$15,761 in Salmon River-Deep Creek, \$11,048 in Tappen-Notch Hill, and only \$6,910 in the White Lake-Grandview Bench area. The average net worth in the fruit-growing area of Broadview-Canoe was \$18,609. On that date the average indebtedness of farm operators according to areas in the same order as above was \$1,396, \$1,306, \$1,250, \$562, \$1,037 and \$1,718.

The proportion of farm operators whose net worth was less than \$2,000 when they started farming, in decreasing order, was 50 per cent for White Lake-Grandview Bench, 35 per cent for Tappen-Notch Hill, 31 per cent for Salmon River-Deep Creek, 24 per cent for Enderby-Grindrod, 21 per cent for Armstrong and 19 per cent for the Broadview-Canoe area.

Gains in Net Worth.- As farmers pursue their operations from year to year, naturally they strive to improve their economic status by increasing the value of their assets in improved or enlarged acreage, better buildings, equipment, livestock or by increasing their cash balance or making new investment in properties other than farm. Such increments in net worth depend on the degree of success of farm operations and on the number of years the operator has been farming.

Total gains in net worth on each farm were divided by the number of years it was operated. The resulting figure - the gain in net worth per year - depended mainly on the earning capacity of the enterprise, but it was affected by the variations in family living expenses as well. These, however, had the tendency to be lower in poorer settlements thus minimizing rather than emphasizing the relative prosperity of the area, because higher living expenses would further decrease both the total and the yearly gains

1/ Net worth is the difference between the value of all assets and all liabilities of farm operators including their savings and investments in business other than farm.

in net worth. Of course, changes in real estate values affected gains in net worth. These values as they were recorded during the survey were the long time average rather than the current prices, however, and their effect on gain in net worth was reduced.

The highest yearly gains in total net worth were in the fruit growing areas of Broadview-Canoe and Sorrento, and the lowest in the White Lake-Grandview Bench area. Information on increases in net worth is provided in Table 7.

The highest and lowest yearly gains in net worth earned by farming only were found in the same districts. The percentages of yearly gain in net worth earned by farming only to the total yearly gain in net worth were 79 per cent for Salmon River-Deep Creek, 74 per cent for Armstrong, Enderby-Grindrod and Broadview-Canoe, 40 per cent for Tappen-Notch Hill, and 40 per cent for White Lake-Grandview.

Farm Surplus.- To illustrate further the relative prosperity of agricultural settlements in different areas, average farm surplus was calculated for each of them. Farm surplus is the amount available from one year of farm operation for payments on indebtedness or for savings. It is calculated by subtracting the farm family cash living expenses from the farm income, and then adding the allowance made in the current expenses for the unpaid family labour.

The average farm surplus for all areas was \$429 per farm. In decreasing order, it was \$708 in the Salmon River-Deep Creek area, \$528 in Armstrong, \$450 in Enderby-Grindrod, \$287 in White Lake-Grandview, \$71 in Tappen-Notch Hill, and only \$41 in the Broadview-Canoe area. This last area had a very low farm surplus partly because its average living expenses were the highest, and partly because a large proportion of its total labour was hired help.

Yearly Family Living Expenses.- The earning capacity of a farm unit usually reflects itself in the levels of living of the operator and his family. Though not a completely satisfactory measure, the average total cash and non-cash costs of living are an indication of the degree of prosperity of a settlement.

On the average in all areas, the non-cash costs of living, such as farm produce used by the family and the value of the shelter provided by the farm dwelling, amounted to one-third of the total living expenses; this share was only slightly higher in the areas of White Lake-Grandview Bench and Tappen-Notch Hill. Both these areas, besides drawing more heavily on perquisites for their living, also have smaller living expenses. Average yearly family living expenses for the different areas are provided in Table 8.

Table 8.- Average Yearly Family Living Expenses in Different Areas of the Northern Okanagan, 1947-48

Area	: : : : : : : : : : :									
	: : : : : Average cash living expenses					: : : : : Average non-cash expenses				
	Number:	Per	adult	a/	farm:	Per	adult	a/	farm:	Total living expenses
	of	farm:	equivalent		equivalent	farm:	equivalent		equivalent	
- dollars -										
Armstrong	80	1,208	344		607	173			1,815	517
Enderby-Grindrod	56	1,116	344		610	188			1,726	532
Salmon River-Deep Creek	35	1,233	378		605	185			1,838	563
Tappen-Notch Hill	23	917	269		607	178			1,524	447
White Lake-Grandview Bench	15	847	278		524	172			1,371	450
Broadview-Canoe	22	1,542	472		636	224			1,978	696
For all farms	231	1,150	348		605	183			1,755	531

a/ Children of 15 years of age and younger were considered equal to one half of an adult.

The percentage distribution of the average cash living expense of \$1,150 for all surveyed areas was 42 per cent for groceries, 16 per cent for clothing, ten per cent for personal expenses, eight per cent for new furnishings, six per cent for personal use of car or truck, six per cent for health, two per cent for charity, two per cent for life insurance premiums, two per cent for fuel, two per cent for domestic utilities, two per cent for education, one per cent for newspapers and books, and one per cent for miscellaneous.

Plans for Future Farm Development.- The extent to which clearing of land is contemplated by local farm operators probably can be considered an indication of the degree of development of agricultural settlement. Armstrong was the most highly developed area. Only five per cent of all operators there planned to clear more land. Corresponding percentages were: 17 per cent for Salmon River-Deep Creek, 18 per cent for Broadview-Canoe, 27 per cent for Enderby-Grindrod, 43 per cent for Tappen-Notch Hill, and 60 per cent for the White Lake-Grandview Bench area.

The percentage of operators who planned to keep more dairy cows (in decreasing order) was: 60 per cent in White Lake-Grandview Bench, 34 per cent in Enderby-Grindrod, 31 per cent in Salmon River-Deep Creek, 30 per cent in Tappen-Notch Hill, 21 per cent in Armstrong, and 18 per cent in Broadview-Canoe.

In all areas, except White Lake-Grandview Bench, about 40 per cent of farm operators planned to keep more livestock of some kind; in the White-Lake-Grandview Bench area, 73 per cent of farm operators had such plans.

Only a small proportion of farm operators in the Northern Okanagan planned to grow more grain crops. In the Armstrong, Salmon River-Deep Creek, Tappen-Notch Hill, and Broadview-Canoe areas less than ten per cent, and in the White Lake-Grandview-Bench and Enderby-Grindrod areas less than 15 per cent of farm operators planned to increase production of grain. In the White Lake-Grandview Bench area, operators who expressed their wish to grow more grain were thinking of having more feed for their livestock and not more grain for sale.

The farming community of the Northern Okanagan district is planning to increase the acreage under forage crops more than that under grain crops. In the Broadview-Canoe, White Lake-Grandview Bench, Tappen-Notch Hill areas operators wanted to grow more hay solely for the purpose of having more feed available on their farms. In the Armstrong and Enderby-Grindrod areas about one-fifth, and in Salmon River-Deep Creek area one-half of the operators expressing such intention wanted to grow more hay for sale and not for feed.

Farm business records were obtained from a total of 231 farms distributed over the above areas. In the Armstrong area (Group I) where it is estimated that there are about 353 farms operated on a full-time basis, 80 records were obtained. In the Enderby-Grindrod area (Group II) 56 records were obtained out of a total of 250 farms. In the Salmon River-Deep Creek area (Group III) which has 105 farms, 35 records were obtained. The Tappen-Notch Hill area (Group IV) which lies outside the Northern Okanagan

proper and has 210 farms, was represented by 23 records. Fifteen records were obtained in the White Lake-Grandview area (Group V) representing a total of 46 farms, while in the Broadview-Canoe area (Group VI) which has 235 farms, 22 records were obtained.

COMPARISON OF DIFFERENT TYPES OF FARMS

Data from 220 of the 231 farms were used in a study of types of farms. The farms were grouped into types according to the source of farm receipts; farms which derived 50 per cent or more of their income from the sale of products from one enterprise were classified according to that enterprise. The seven groups so classified are:

1. Dairy farms.- Farms which derived 50 per cent or more of their income from the sale of dairy products or dairy cattle.
2. Crop Farms.- Farms which derived 50 per cent or more of their income from the sale of grain or forage crops.
3. General Livestock Farms.- Farms which derived 50 per cent or more of their income from the sale of livestock or livestock products other than dairy.
4. Vegetable-Small Fruit Farms.- Farms which derived 50 per cent or more of their income from the sale of vegetables or small fruits.
5. Tree Fruit Farms.- Farms which derived 50 per cent or more of their income from the sale of tree fruits.
6. Mixed Farms.- Farms which derived their income from several enterprises, none of which provided 50 per cent of the total.
7. Part Time Farms.- Farms which obtained 50 per cent or more of their income from work off the farm.

Land Use.- Table 9 indicates the average number of improved and unimproved acres per farm for each type. Total improved acreage ranged from 63 acres on crop farms to 24 acres on part time farms.

The percentage of improved acres to total acreage varied as to the type of farm. Improved acres on crop farms constituted 61 per cent of the total acreage while only 22 per cent of all acreage on part time farms was improved. Percentage of improved acres to total acreage on tree fruit farms, general livestock farms, vegetable-small fruit farms, dairy farms and mixed farms were 47 per cent, 45 per cent, 38 per cent, 38 per cent and 36 per cent, respectively.

A further comparison shows variation in crop acreages as to type of farm. Tree fruit farms had 26 per cent of total acreage in orchard, while crops made up only eight per cent of the total acreage on part time farms. Corresponding percentages on crop farms, general livestock farms, mixed

farms, vegetable-small fruit farms, and dairy farms were 24 per cent, 16 per cent, 14 per cent, 12 per cent and 12 per cent.

Table 9.- Land Use, 220 North Okanagan Farms,
Classified by Type of Farm, 1947-1948

Item	Type of farm						
	General	Tree	Vegetable-	Part			
	Crop	Dairy	Livestock	Mixed	Fruit	Small fruit	time
Number of farms	27	34	25	78	15	12	29
- average acres per farm -							
Farmstead	2.1	1.7	1.7	1.8	1.6	1.7	1.3
Orchard	0.5	0.3	0.1	0.5	16.9	2.3	0.7
Crop	24.8	12.4	20.5	18.6	1.8	13.1	8.4
Hay	25.8	17.8	24.0	19.6	8.3	16.0	11.9
Pasture	7.6	5.9	9.9	4.0	1.1	6.5	1.5
Fallow	2.2	1.2	1.2	2.4	0.2	0.3	-
New breaking	-	-	0.7	-	0.1	-	0.4
Small fruit	-	-	-	-	0.3	1.0	-
Total improved	63.0	39.3	58.1	46.9	30.3	40.9	24.2
Wild hay	0.1	5.7	1.9	11.4	6.1	8.8	3.3
Bush	11.4	12.2	12.3	18.6	0.3	-	6.6
Cleared	1.0	1.4	1.2	1.8	2.5	1.4	2.6
Logged and slashed	2.3	14.8	12.3	10.9	7.3	31.5	12.6
Second growth	4.2	3.3	1.1	2.9	11.1	1.1	4.0
Timber	7.4	10.2	10.8	12.6	2.1	13.9	27.4
Rough pasture	12.6	9.4	27.9	15.1	4.7	0.8	21.4
Waste	1.6	8.5	4.2	11.9	-	7.8	5.3
Total unimproved	40.6	65.5	71.7	85.2	34.1	65.3	83.2
Total acreage	103.6	104.8	129.8	132.1	64.4	106.2	107.4

A breakdown of the improved acreages is shown in Table 10. More acres were used for growing alfalfa than for any other single crop on all types of farms except tree fruit farms. Land used for alfalfa ranged from 21 acres per farm for crop farms to five acres on tree fruit farms. Tree fruit farms had an average of 17 acres per farm in tree fruits. This was more than one-half of their total acreage.

Wheat was the most important grain crop grown in the area. All grains together constituted the second most important use of improved land on all of the farm types except tree fruit and vegetable small-fruit farms. The second most important use of improved land on tree fruit farms was for alfalfa

while on vegetable-small fruit farms it was pasture.

Other important uses of land in the area were for timothy hay, field peas, fallow and potatoes. The farmstead occupied approximately two acres on all farm types.

Table 10.- Pattern of Land Utilization, 220 North Okanagan Farms, Classified by Type, 1947-48

Item	Type of farm						
	: General :	: Tree :	: Vegetable- :	: Part :			
	: Crop :	: Dairy :	: livestock :	: Mixed :	: fruit :	: small fruit :	: time
Number of farms	: 27 :	: 54 :	: 25 :	: 78 :	: 15 :	: 12 :	: 29
- average acres per farm -							
Wheat	8.9	2.1	7.8	6.0	0.9	2.0	1.7
Oats	4.4	4.8	5.4	4.2	-	1.6	2.1
Other grain a/	1.7	0.9	5.2	3.4	-	1.9	1.3
Total grain	15.0	7.8	18.4	13.6	0.9	5.5	5.1
Alfalfa	20.9	13.2	21.1	15.0	5.0	13.6	9.1
Timothy	5.2	5.7	2.0	2.5	1.7	1.9	1.6
Other forage b/	0.2	1.4	1.5	2.9	2.4	0.5	1.8
Peas	8.0	1.4	1.1	2.7	-	0.1	2.4
Pasture	7.6	5.9	9.9	4.0	1.1	6.5	1.5
Broken and fallow	2.0	1.2	1.9	2.4	0.3	0.3	0.4
Potatoes	1.3	0.5	0.4	0.8	-	4.6	0.2
Other vegetables c/	0.2	0.2	-	0.7	-	2.9	0.1
Small fruit	-	-	-	-	0.3	1.0	-
Tree fruit	0.5	0.3	0.1	0.5	17.0	2.3	0.7
Farmstead	2.1	1.7	1.7	1.8	1.6	1.7	1.3
Total improved	63.0	39.3	58.1	46.9	30.5	40.9	24.2

a/ Other grain includes: rye and barley.

b/ Other forage includes: corn, clover, other hay, and mangels.

c/ Other vegetables include: peas, tomatoes, lettuce and celery.

Maximum amounts of land which were available for use on North Okanagan farms in the 1947-48 crop year are indicated by the average estimated arable acreages per farm (Table 11). The percentage of improved land to the potential useable land was not high. Only about one-half the total land available for all farms was being utilized. This is significant, as many of the farms could have had double their improved acreages by more intensive clearing and cultivation.

Table 11.- Estimated Arable Land, Improved Acreage, and Per Cent of Improved to Total Arable Acres, 220 North Okanagan Farms, Classified by Type, 1947-48

Type of farm	: :Total :acres	: : Estimated : arable acres	: : Improved : acres	: Per cent improved : to estimated : arable acreage
Crop	103.6	85	63	74
Dairy	104.8	72	39	54
General livestock	129.8	99	58	59
Mixed	132.1	90	47	52
Tree fruit	64.4	48	30	63
Vegetable-small fruit	106.2	62	41	66
Part time	107.4	77	24	31

Farm Capital.- The average total farm investment ranged from a high of \$15,802 per farm for tree fruit farms to a low of \$6,792 for part time farms (Table 12). The remaining five types of farms listed in descending order of capital investment per farm were crop farms, vegetable-small fruit farms, general livestock farms, mixed farms and dairy farms.

Table 12.- Average Distribution of Farm Capital, by Type of Farm, 220 North Okanagan Farms, 1947-1948

Item	Type of farm						
	:Crop	:Dairy	:livestock	:Mixed	:fruit	:Vegetable- :small fruit	: Part : time
Number of farms	: 27	: 34	: 25	: 78	: 15	: 12	: 29
- dollars per farm -							
Land	7,358	5,639	6,102	5,721	8,785	6,956	3,027
Dwelling	2,454	1,923	1,918	2,046	2,875	1,808	1,223
Other buildings	1,699	1,657	1,381	1,461	1,335	1,647	692
All buildings	4,153	3,580	3,299	3,507	4,210	3,455	1,915
Livestock	1,330	2,032	1,947	1,662	528	1,391	653
Machinery	2,752	1,738	1,840	2,127	2,209	1,896	1,084
Supplies	171	96	153	139	70	138	113
Total	15,764	13,085	13,341	13,156	15,802	13,836	6,792

Investment in land was the largest proportion of total investment for all types of farms. It made up 56 per cent of the investment on vegetable-small fruit farms and 50 per cent on tree fruit farms. For the other farm types, land investment ranged from 43 per cent to 47 per cent of the total capital investment. Buildings, including the farm dwelling, were the second largest total investment in all cases. Investment in machinery was third for crop farms, mixed farms, vegetable-small fruit farms and part time

farms. On dairy farms, livestock was the third largest investment in the farm business.

Buildings.- Over one-half of the total investment in buildings was in the farm dwelling. Barns and machine sheds accounted for the major portion of the remainder of the building investment.

Livestock.- Approximately ten per cent of the total investment on all farms was in livestock. It was, naturally, a large part of the total investment on dairy farms, general livestock farms, and mixed farms. Sixteen per cent of the total investment was in livestock on dairy farms as contrasted with three per cent on tree fruit farms. The latter was the only group in which livestock accounted for significantly less than ten per cent of the total farm capital.

The Dairy Herd.- All the farm types had some dairy cows. Dairy farms had the greatest number with an average of nine cows per farm. Mixed farms had six cows per farm. General livestock farms had an average of four dairy cows. Tree fruit farms had only two.

Eighteen per cent of the dairy farms had some purebred dairy cattle. In this group of farms, there was but one all-purebred herd. Twenty-four per cent of the mixed farms had purebred cattle. Five farms in this group had all-purebred herds.

Machinery and Equipment.- All farm types had capital invested in machinery amounting to about 15 per cent of the total investment. More than one-half of the farms had tractors and most of them had either a car or a truck.

Farm Receipts.-

Cash Receipts.- ranged from an average of \$2,143 for part time farms to \$4,677 for the vegetable-small fruit farms (Table 13).

Sixty-two per cent of the farm receipts for crop farms were obtained from the sale of grain, peas, alfalfa, and other forage. Income from livestock product sales amounted to 85 per cent, 81 per cent and 60 per cent of the total cash receipts for dairy farms, general livestock farms, and mixed farms, respectively. Eighty per cent of all cash income for tree fruit farms came from the sale of tree fruits. Potatoes, other vegetables, and small fruit accounted for 64 per cent of the receipts on vegetable-small fruit farms. Part time farms derived 60 per cent of their income from non-farm enterprises, either as wages or from sales of logs and timber. The sale of dairy products was the most common source of farm receipts for all types of farms. However, the dairy enterprise contributed less than ten per cent of receipts on tree fruit and vegetable-small fruit farms.

On three farm types, namely, dairy, general livestock and tree fruit, one-fifth of the total receipts was in the form of increases in inventory during the crop year 1947-48. Increases in inventory made up less than one-tenth of the total receipts on vegetable-small fruit farms but as much as

one-quarter on crop mixed farms, and more than one-third on part time farms.

Table 13.- Sources of Cash Receipts, 220 North Okanagan Farms,
Classified by Type, 1947-48

Item	Type of farm						
	:Crop	:Dairy	:livestock	:Mixed	:fruit	:Vegetable-:small fruit	:Part time
Number of farms	: 27	: 34	: 25	: 78	: 15	: 12	: 29
	: :	: :	: - dollars per farm	: -	: :	: :	: :
Total cash receipts	:3,015	:2,974	: 2,932	: 3,222	: 4,248	: 4,677	:2,143
	- percentage per farm -						
Grain	12.5	1.1	4.2	5.4	-	1.7	4.1
Peas	14.7	1.2	2.8	3.8	-	-	3.8
Alfalfa	26.4	1.1	4.5	5.0	1.2	2.5	3.8
Other forage	8.0	3.7	2.2	2.1	0.4	0.2	0.1
Potatoes	5.0	0.7	0.6	6.2	0.4	35.1	1.1
Other vegetables	0.5	0.1	2.1	0.3	0.3	16.9	0.3
Small fruits	-	0.4	-	0.6	1.7	12.4	1.6
Tree fruits	1.9	0.1	-	2.1	79.5	6.3	1.8
Total crops	69.0	8.4	14.4	27.3	83.5	75.1	16.6
Dairy products	17.9	73.6	22.9	33.6	4.0	6.9	17.6
Other livestock products	10.0	11.2	57.7	26.4	2.8	14.4	5.3
Total livestock products	27.9	84.8	80.6	60.0	6.8	21.3	22.9
Custom work	1.7	0.5	0.8	2.9	1.0	1.2	0.1
Wages	1.2	3.5	3.6	3.6	4.1	2.1	44.2
Co-operatives	0.2	0.1	-	0.1	1.5	0.1	-
Timber-lumber	-	1.7	0.6	5.6	2.9	0.2	15.3
Miscellaneous a/	-	1.0	-	0.6	0.2	-	0.9
Total other	3.1	6.8	5.0	12.7	9.7	3.6	60.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a/ Miscellaneous income includes: rent of land and sale of gravel and wood for fuel.

The revenue derived from the sale of farm machinery and special farm equipment was classified as capital receipts. Receipts from this source amounted to four per cent or less for six of the seven types of farms.

They made up seven per cent of total receipts for crop farms.

Total farm receipts amounted to an average of \$5,549 on tree fruit farms. This was the highest for all types of farms. Part time farms were last with \$3,608. Total receipts on all other types of farms ranged from \$3,875 to \$5,334.

Farm Expenses.- Current expenses incurred in operating the farm during the survey year varied from an average of \$1,317 for part time farms to \$2,945 for tree fruit farms (Table 14). The major item of current expenses for all types of farms was labour which ranged from one-third to nearly one-half of the total expenses. Most of the labour was unpaid family labour except in the case of tree fruit and vegetable-small fruit farms, where the value of paid labour exceeded the value of unpaid labour. Thirty-two per cent of all current expenditures on tree fruit farms and 27 per cent on vegetable-small fruit farms was for hired labour.

On four farm types, the principal item of cash expense was purchased feed. It made up 31 per cent of total cash expenses for dairy farms, 25 per cent for general livestock, 23 per cent for mixed, and 16 per cent for part time farms. Custom work consisting of baling, combining and trucking, was the largest cash expense incurred on crop farms. Outlay for containers which included boxes, crates and sacks made up a fairly important proportion of expenditures on tree fruit and vegetable-small fruit farms.

The variation in total current expenses resulted almost entirely from variation which occurred in the group of items consisting of labour, feed purchased, custom work, and containers. It follows then that all remaining expense items, together, formed very nearly the same proportion of total current expenses for each type of farm.

Capital expenditures constituted about one-quarter of the total expenses of vegetable-small fruit farms, slightly more than one-half for part time farms, and slightly less than one-half for crop farms. They made up roughly one-third of the total expenses on dairy, general livestock, mixed, and tree fruit farms. For this study, capital expenses consisted of the value of livestock and equipment purchased.

Total expenses were highest on tree fruit farms, which average \$4,437 per farm. The lowest total expenses of all the full time farms was \$2,991 on dairy farms. The other full time farm types had total expenses falling in the range of \$3,005, to \$3,637. Part time farms had total expenses amounting to an average of \$2,767 per farm.

Farm Income.- Farm income is the difference between total farm receipts and total farm expenses. It represents the amount the operator received for his work on the farm plus the interest on invested capital. The average farm income for the different types of farm varied from \$841 for part time farms to \$1,697 for vegetable-small fruit farms.1/

1/ Farm income included income from off-farm sources. Consequently part time farms had a farm income which was comparable with that on all other farms. Inclusion of off-farm income did not materially affect income on full time farms.

Table 14.- Average Distribution of Current Farm Expenses, 220 North Okanagan Farms, Classified as to Type, 1947-48

Item	Type of farm						
	: Crop	: Dairy	: livestock	: Mixed	: Tree	: Vegetable	: Part
Number of farms	: 27	: 34	: 25	: 78	: 15	: 12	: 29
Total current expenses	- dollars per farm -						
	: 1,794	: 1,866	: 1,969	: 2,002	: 2,945	: 2,650	: 1,317
	- percentage per farm -						
Unpaid family labour	29.3	22.1	31.0	30.0	8.6	16.9	43.1
Paid labour	11.4	11.0	5.8	8.6	32.5	27.2	3.7
Feed purchased	8.2	31.3	24.8	23.0	7.5	15.0	15.6
Equipment operation	12.8	9.7	13.4	11.7	8.0	8.8	14.5
Custom work	13.7	6.2	6.4	6.1	11.6	5.4	5.4
Taxes	6.0	5.4	4.8	5.3	3.9	3.5	3.6
Seed purchased	5.2	2.3	2.8	2.7	2.6	3.4	2.5
Fertilizers	1.9	1.2	1.4	1.3	2.9	4.8	0.8
Containers	0.6	-	0.1	1.4	12.2	7.1	1.1
Equipment repairs	2.5	1.5	1.6	1.9	1.0	1.7	1.3
Building repairs	1.1	0.8	1.5	1.3	0.7	1.1	1.3
Small hardware	1.5	1.3	0.7	1.0	0.8	1.1	1.0
Insurance	0.8	1.0	0.8	0.7	1.0	0.7	0.5
Fees	1.0	1.1	0.7	1.0	0.6	0.7	0.7
Farm utilities	0.7	1.0	0.6	0.7	0.7	0.5	0.3
Miscellaneous livestock a/	0.8	1.7	1.0	0.9	0.2	0.5	0.6
Miscellaneous b/	2.5	2.4	2.6	2.4	5.2	1.6	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a/ Miscellaneous livestock expenses include: salt, germicides, cow testing, veterinary services and medicine, fly spray, straw and exhibition expenses.

b/ Miscellaneous includes: cash rent, fuel, pasture rent, hay lease, travel and advertising, printing, spray material, logging and mill expenses.

By deducting interest at five per cent from the farm income, a measure known as labour income was obtained. It represents the return to the operator for his labour and management. The average labour income per farm ranged from \$153 on crop farms to \$1,005 on vegetable-small fruit farms.

The value of perquisites on all farm types amounted to roughly \$600 per farm for the survey year. Perquisites consist of the farm products used in the farm home and the rental value of the farm house. Labour income plus perquisites gives labour earnings which represent a return to the operator after all cash and non-cash expenses have been deducted. Labour earnings is the measure by which the success of the different types of farms

in the North Okanagan were compared. Vegetable-small fruit farms showed the greatest labour earnings of \$1,647. Mixed farms were second with labour earnings of \$1,028. Part time farms were third with \$1,021 in labour earnings. Tree fruit farms, crop farms, general livestock farms and dairy farms had labour earnings of \$918, \$829, \$772 and \$770, respectively. Part time farms had an average return to operator's labour and management of only \$74 when off-farm wages were deducted from total farm receipts.

a/
Table 15.- Average Financial Summary, 220 North Okanagan Farms,
Classified as to Type, 1947-48

Item	Type of farm						
	: Crop	: Dairy	: livestock	: Mixed	: fruit	: Vegetable- small fruit	: Part time
Number of farms	: 27	: 34	: 25	: 78	: 15	: 12	: 29
-- dollars per farm --							
Cash receipts	3,016	2,974	2,932	3,222	4,248	4,677	2,143
Capital receipts	312	53	107	95	210	173	102
Net inventory increase	1,070	848	845	991	1,091	484	1,363
Total receipts	4,398	3,875	3,884	4,308	5,549	5,334	3,608
Current expenses	1,794	1,866	1,969	2,002	2,945	2,650	1,317
Capital expenses	1,663	1,125	1,036	1,260	1,492	987	1,450
Net inventory decrease	-	-	-	-	-	-	-
Total expenses	3,457	2,991	3,005	3,262	4,437	3,637	2,767
Farm income b/	941	884	879	1,046	1,112	1,697	841
Interest on investment	783	654	667	658	790	692	340
Labour income	153	230	212	388	322	1,005	501
Value of per- quisites	676	540	560	640	596	642	520
Labour earnings	829	770	772	1,028	918	1,647	1,021
Farm income	941	884	879	1,046	1,112	1,697	841
Unpaid labour	525	413	611	594	254	449	568
Farm family income	1,466	1,297	1,490	1,640	1,366	2,146	1,409
Cash living expenses	1,388	943	1,065	1,127	1,321	1,190	1,015
Farm surplus	78	354	425	513	45	956	394

a/ Table 17, Average Financial Summary, 1950-51

b/ Farm income includes income from off-farm work and from enterprises not essentially farming, i.e., - sale of logs.

Data on a 1950-1951 Basis.— The foregoing data and analysis describe the farm organization, capital structure, expenses, and returns on the different types of farms in the Northern Okanagan Valley for the crop year 1947-48. In order to show the capital structure and returns under 1950-51 cost-price relationships, appropriate indices were applied to the data contained in Tables 12 to 15 inclusive. The estimated capital investment and financial summary for the year 1950-51 are presented in Tables 16 and 17.

Estimated Farm Capital Required by a Settler, 1950-51.— The estimated total investment as calculated for Northern Okanagan Valley farms for the year 1950-51 indicates the approximate capital requirements in 1950-51 for farms of various types (Table 16).

On the basis of these estimates the capital requirements per farm increased by about 15 per cent for each type of farming sample.

The proportion of total investment in livestock and machinery has increased relative to that in land and buildings since 1947-48. The reason for this is that prices of land and buildings have lagged behind those of livestock and machinery. Nevertheless, land continues to make up the largest part of total investment in Northern Okanagan farms (Table 16).^{1/} It constitutes almost one-half of the investment for all farm types except tree fruit farms, where land makes up slightly more than one-half of the total investment.

Table 16.— Distribution of Farm Capital, Estimated Average per Farm, 220 Northern Okanagan Farms, 1950-51

Item	Index : number	Type of farm						
		Crop	Dairy	livestock	Mixed	fruit	Vegetable- small fruit	Part time
Number of farms		27	34	25	78	15	12	29
Land	110.1 a/	8,101	6,208	6,718	6,299	9,672	7,658	3,333
Buildings	110.1 a/	4,572	3,942	3,632	3,861	4,635	3,804	2,108
Livestock	127.8 b/	1,700	2,597	2,488	2,124	675	1,778	834
Machinery	128.6 c/	3,539	2,235	2,366	2,735	2,841	2,438	1,394
Supplies	119.1 d/	204	114	182	166	83	164	134
Total		18,116	15,096	15,386	15,185	17,906	15,842	7,803

a/ 1947-48 values raised to 1950 values by an index of 110.1 (1948-100). (Dominion Bureau of Statistics. (DBS) (Current Values of Farm Land and Buildings, B.C.)

b/ 1947-48 values raised to 1951 values by an index 127.8 (1948-100).

(D.B.S. Wholesale Prices of Animal Products Index - Canada).

c/ 1947-48 values raised to 1951 values by an index 128.6 (1948-100).

(D.B.S. Index of Farm Machinery Western Canada).

d/ 1947-48 values raised to 1951 values by an index 119.1 (1948-100).

(D.B.S. Index of Equipment and Materials Used by Farmers - Canada).

Estimated Financial Returns 1950-51.— A statement showing estimated financial returns by type of farming groups for 1950-51 is presented in Table 17. ^{2/} It may be noted that estimated receipts and expenses show increases of from 18 to 20 per cent over the actual receipts and expenses for 1947-48. After deducting interest

^{1/} The amounts of capital invested and distribution as showing in Table 16 are not necessarily the optimum amounts. The factors of production (land, buildings, livestock, machinery) may not be used to sufficient intensity or in their best proportions one to the other.

^{2/} Receipts, expenses, and returns are amounts based on physical yields, production outlays for the crop year 1947-48. Thus, raising the values of receipts and expenses by index numbers has not accounted for possible changes in physical yields or outlays.

Table 17.- Financial Summary, Estimated Average per Farm, 220 North Okanagan Farms, 1950-51

Item	Type of farm							
	Index number	Crop	Dairy	livestock	Mixed	fruit	Vegetable- small fruit	Part time
Number of farms		27	34	25	78	15	12	29
- dollars -								
Cash receipts		3,548	3,502	3,452	3,793	5,000	5,503	2,521
Capital receipts	128.2a/	400	68	137	122	269	222	131
Net inventory increase	125.2 b/	1,340	1,062	1,058	1,241	1,366	606	1,706
Total receipts		5,288	4,632	4,647	5,156	6,635	6,331	4,358
Current expenses		2,048	2,109	2,228	2,275	3,398	3,059	1,499
Capital expenses	128.2a/	2,132	1,442	1,328	1,615	1,913	1,265	1,859
Net inventory decrease		-	-	-	-	-	-	-
Total expenses		4,180	3,551	3,556	3,890	5,311	4,324	3,358
Farm income		1,108	1,081	1,091	1,266	1,324	2,007	1,000
Interest (5.4%)	109.0 c/	978	815	831	820	967	855	421
Labour income		130	266	260	446	357	1,152	579
Perquisites	120.7 d/	816	652	767	772	719	775	628
Labour earnings		946	918	936	1,218	1,076	1,927	1,207
Farm income		1,108	1,081	1,091	1,266	1,324	2,007	1,000
Unpaid labour		623	490	724	712	301	532	673
Farm family income		1,731	1,571	1,815	1,978	1,625	2,539	1,673
Cash living expenses		1,745	1,180	1,331	1,413	1,641	1,491	1,285
Farm surplus		-14	391	484	565	-16	1,048	388

a/ Unweighted average of livestock and machinery indices. D.B.S. Canada, 1951.

b/ Unweighted average of livestock, machinery, and supply indices. D.B.S. Canada, 1951.

c/ Index of tax and interest rates (Western Canada). D.B.S. 1951.

d/ Unweighted average of farm-food cost index and farm buildings values. D.B.S.

on the increased capital investment and allowing for value of the food and housing supplied by the farm to the farm family, the operator's labour earnings showed an increase of from 14 to 20 per cent among the different groups. Cash living expenses for the farm family were estimated to have increased by about 25 per cent.

VARIATIONS IN LABOUR EARNINGS

Among the 220 farms studied, labour earnings ranged from minus \$2,526 to plus \$5,857. Fifteen per cent of the farms had labour earnings which were negative (Table 18). Seventy per cent of the farms had labour earnings in the range from \$0 to \$1,999, while 15 per cent had labour earnings in excess of \$2,000. The same percentage distribution pattern was evident in farms of the different type classifications. For example, 12 per cent of mixed farms had negative labour earnings, 74 per cent had labour earnings in the range from \$0 to \$1,999 and 14 per cent had labour earnings above \$2,000.

Table 18.- Distribution of Labour Earnings as to Type of Farm and All Farms, 220, North Okanagan Farms, 1947-48

	Number of farms								Per
									cent of
Labour	General	Tree	Vegetable-	Part	All	total			
earnings	Crop	Dairy	livestock	Mixed	fruit	small fruit	time	farms	farms
Plus									
\$4,000 or more	-	-	1	-	-	1	-	2	0.9
3,000 to 2,999	-	-	-	6	-	-	-	6	2.7
2,000 to 1,999	5	3	5	5	3	1	3	25	11.4
1,000 to 999	5	5	2	22	5	7	12	58	26.4
0 to 999	11	22	7	36	5	2	12	95	43.2
Minus									
\$0 to 999	5	4	10	9	1	1	2	32	14.5
1,000 or more	1	-	-	-	-	1	-	2	0.9
Total	27	34	25	78	15	12	29	220	100.0

FACTORS AFFECTING EARNINGS

Size of Farm Operation.- In this type of farm analysis, farms of various sizes have been considered to be comparable insofar as certain organizational features are concerned. It is common knowledge, however, that large farms possess features conducive to efficiency that small farms fail to possess. For a farm to be successful it must produce a sufficient volume of goods so that overhead expenses per unit are reasonably low. There was wide variation in the size of operations between individual farms in this study. Therefore, the following analysis was carried out to verify an apparent relationship between size of operation and labour earnings.

Size in Cultivated Acreages.- Large cultivated acreages went together with higher labour earnings on Northern Okanagan farms as shown in Table 19. The first two classes in the table are shown to have labour earnings nearly equal,

although the second class has twice as many cultivated acres as the first. This can be accounted for by the presence of a number of tree fruit farms and vegetable-small fruit farms in the group having less than 20 acres. At the same time, those farms had high labour earnings which favourably affect the average labour earnings for the small-size group.

Table 19.- Relation of Size of Farm in Cultivated Acreage to Average Labour Earnings, 220 Northern Okanagan Farms, 1947-48

Size in cultivated acres	Number of farms	Labour earnings - dollars -
Less than 20	40	703
20 to 39.9	81	711
40 to 79.9	75	1,073
80 and over	24	1,845

Total Investment.- Large investments in the farm business also went together with higher labour earnings. Table 20 shows the relation of size of farm, measured by total investment in farm business, to labour earnings. Labour earnings on farms with less than \$5,000 investment exceeded those on farms with \$5,000 to \$9,999 investment. The reason for this is that many part-time farms fall into the first group. They have higher labour earnings relative to total investment in the farm because receipts from off-farm sources were included in the calculation of returns.

Table 20.- Relation of Size of Farm in Total Investment to Average Labour Earnings, 220 Northern Okanagan Farms, 1947-48

Investment in farm business	Number of farms	Labour earnings - dollars -
Less than \$5,000	21	797
\$5,000 to 9,999	75	718
\$10,000 to 14,999	62	947
\$15,000 to 19,999	27	1,151
\$20,000 and over	35	1,574

Size of Dairy Herd.- When farms on which the most important single source of income was dairying were sorted according to the number of milking cows, it was found that higher labour earnings went together with larger herds. Farms were divided into three groups according to size in cultivated acres. Each of the size groups was then sub-divided into five sorts according to the number of cows in the dairy herd. By this method, the effect of differences in amount of cultivated acreage on individual farms is eliminated from the relationship between size of herd and labour earnings. Also, in the same size group there was no marked variation in the average per cent of receipts from dairying and in production per cow. From Table 21, it can be seen that labour earnings increased with the size of dairy herd.

Table 21.- Relation of Size of Dairy Herd to Labour Earnings, 95 North Okanagan Farms,
1947-48

Size in cultivated: acres	Number of cows	Number of farms	Average : earnings : ÷ dollars	Average per cent : of receipts from: dairy	Average : production : per cow	Average cultivated : acres per farm
Less than	Less than 5.0	15	303	55	259	24
	5.0 to 6.9	21	674	60	259	27
	7.0 to 8.9	10	665	58	230	28
40 acres	9.0 to 10.9	5	879	66	301	30
	11.0 and more	-	-	-	-	-
Total		51	583	59	258	27
40.0 to 79.9	Less than 5.0	1	550	33	206	40
	5.0 to 6.9	7	841	43	268	51
	7.0 to 8.9	6	357	52	248	56
	9.0 to 10.9	8	1,669	43	250	54
	11.0 and more	10	1,715	67	263	56
Total		32	1,221	52	257	54
80.0 acres	Less than 5.0	-	-	-	-	-
	5.0 to 6.9	1	365	34	383	87
	7.0 to 8.9	2	828	44	219	120
	9.0 to 10.9	1	1,251	42	276	82
	11.0 and more	8	1,683	55	270	101
Total		12	1,398	50	269	101

Productive Man Work Units per Farm.— Of the methods by which size of farm business can be measured, the one best suited for making comparisons is productive man work unit. It reduces acres and livestock to a common basis. A productive man work unit (P,M.W.U.) is defined as the amount of any kind of income-producing work accomplished on the farm by one man in a ten hour day. The measure is based on the amount of work required to do the various farm tasks. It is calculated by multiplying the number of acres in each crop and the number of each kind of livestock by established standards. For example, the feeding, milking, and care of one dairy cow for a year represents 13.5 man work units since, under average conditions, about 135 hours of man labour per cow per year are required to do these chores.

Productive man work units were calculated for normal farm operations of farms in this study. Although off-farm work and farm logging are certainly income-producing work, they were omitted in the total man work units for the following reasons: (1) difficulty in determining standard units, (2) difficulty in distinguishing between what part of receipts from such enterprises was made up of returns to equipment and what part to operator's labour, and (3) farm logging could not be considered as a normal farm operation in that it may have been only a one-year proposition. Thus the size of farm business was measured in terms of the labour necessary to carry out the work requirements of the farm unit itself.

The average man work units required to do the farm work did not vary greatly with the type of farm. The average number of units for general livestock farms, tree fruit farms, crop farms, dairy farms and mixed farms varied only slightly from 230 units. Vegetable-small fruit farms appeared to be the largest and part time farms the smallest in size of operations. Mixed farms were the smallest full-time operation.

The relationship between total man work units per farm and labour earnings is shown in Table 22. It is essentially a relationship between size of farm operation and the financial success of the farm. The average labour earnings per farm varied from \$91 in the group having less than 149 productive man work units to \$2,185 in the group having more than 450 man work units.

Table 22.— Relation of Size of Farms as Measured by Total Productive Man Work Units to Labour Earnings, 215 Northern Okanagan Farms, 1947-48 a/

		Average per farm	
Total P.M.W.U.	Number of farms	Total P.M.W.U.	Labour earnings
per farm			- dollars -
Less than 149	60	106	91
150 to 249	91	188	585
250 to 349	38	305	919
350 to 449	17	397	1,679
450 and more	9	524	2,185
All farms	215	217	660

a/ Five farms with large total P.M.W.U. were not included.

In the preceding analysis measuring the effect of scale of operations on the success of the farm business, labour earnings were shown to increase as size of operations increased. However, the size measured in total productive man work units did not indicate the amount of labour used. That is to say, as size increased, the amount of labour might have increased in lesser proportion. If true, it would destroy the purpose of the analysis which was to measure the effect of increasing all factors in the same proportion.

Labour Efficiency.- By dividing the total man work units by the number of man equivalents on the farm, a measure of labour efficiency was obtained. The average number of productive man work units per man ranged from 155 on part time farms to 192 on tree fruit farms. Mixed farms, dairy farms, and general livestock farms had approximately 180 units of work per man. Vegetable-small fruit farms had 191 units while crop farms had 161 units per man.

Fifty per cent of all the farms had from 50 to 149 man work units per man. Thirty-four per cent had from 150 to 250 units and 12 per cent had from 250 to 349 units. Only four per cent of all the farms had 350 or more work units per man.

In order to modify the effect of labour efficiency, 214 records were divided into two groups: those which had above average productive man work units per man, and those which had below average units per man. Each group was then sub-sorted on the basis of size in total productive man work units. The results show that labour earnings increased as size of operations increased for both high and low levels of labour efficiency. In addition, labour earnings were found to be greater on farms above average in work units per man for the corresponding size of operations. The relationship shown in Table 23 approaches a truer measure of the effect of scale of operations on labour earnings, since crops and livestock handled per man are held constant.

Table 23.- The Effect on Labour Earnings of Increasing the Size of Farm, for Above and Below Average Levels of P.M.W.U. per Man, 214 a/ Northern Okanagan Farms, 1947-48

	:	:Number:		Average per farm	
		: Size of farm	: of :	: Labour	
P.M.W.U. per man	:	(P.M.W.U.)	:farms :	Total P.M.W.U. :	earnings
Above average b/	Less than 149	6	128	-10	
	150 to 299	37	222	829	
	300 to 449	33	356	1,259	
	450 to 599	7	517	2,262	
Below average	Less than 149	54	104	102	
	150 to 299	68	187	532	
	300 to 449	8	350	1,040	
	450 to 599 c/	1	-	-	

a/ Six farms above 599 P.M.W.U. were omitted.

b/ Average P.M.W.U. per man was 176.

c/ Only one farm in the group.

Rates of Production.- In addition to the size of operations and labour efficiency, crop yields and output per cow were other factors known to affect labour earnings on Northern Okanagan farms. In order to show the relationship between size of operation and labour earnings, it was necessary to eliminate influences from differences in crop yields and milk output per cow.

Crop Yields.- Variation in crop yields was made evident by setting up a distribution on the basis of the crop index. It is a measure by which crop yields on a particular farm are expressed as percentages of yields averaged for the whole area. Twenty-nine per cent of the farms had crop indices which ranged from 90 to 109, 22 per cent had crop indices which ranged from 70 to 89, and 19 per cent fell into a range from 110 to 129. Fifteen per cent of the farms had crop indices of less than 70, and 15 per cent had indices greater than 130.

Output per Cow.- Since milk is sold on the basis of butterfat content, the number of pounds of butterfat per cow on a herd basis was used to measure the productivity of cows. The average production per cow for 206 farms 1/ was 245 pounds of butterfat. There was sufficient range in production per cow to allow the 206 farms to be divided into five groups. Slightly less than one-quarter of the farms had butterfat production of less than 200 pounds per cow. One-quarter of the farms had cows which produced from 200 to 249 pounds each, and slightly more than one-quarter had an output per cow of from 250 to 299 pounds of butterfat. One fifth of the farms produced from 300 to 349 pounds per cow, while only one-twentieth of the farms had a herd producing over 350 pounds of butterfat per cow.

CONCLUSION

The Northern Okanagan Valley is especially well suited for the development of dairy farming. There are also opportunities in mixed farming stressing beef, poultry or hogs, or in more highly specialized fruit or vegetable production.

Size of farming operation is the principal factor determining farm income. In general the farm should be of such a size and type as to utilize efficiently the farm labour supply throughout the year. The chances of financial success are greater for those farmers having at least 40 acres of cultivated land and an investment of \$10,000 or more.

Values of land in the Northern Okanagan district vary by areas being highest in the tree-fruit growing regions and in the lower and more level parts of valleys.

Employment outside the farm on a part-time basis provides an important source of income for operators whose earnings from farming are seriously restricted because of the small size of their farms. Principal types of such employment are provided by logging camps and sawmills.

1/ Fourteen farms did not have any cows.

